WINE & HEALTH

AN EPISTEMIC PERSPECTIVE

Trade Veteran

Companion essays:

The Right Wine: Cool Climate, Ancient Roots — The Case for Quality and Health

Epistemic Pluralism and the Wine-Health Debate

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Wine & Health:
An Epistemic Perspective

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I. Preamble

The wine and health debate has accumulated a substantial scientific literature over the past four decades. Richard Baxter's *Wine and Health: Making Sense of the New Science and What It Means for Wine Lovers* (2019) represents a careful, balanced, and self-critical synthesis of that literature by a physician with no commercial stake in the wine industry. It is taken here as a reliable map of the field's current state — its established findings, its acknowledged uncertainties, and, crucially, the questions it has not asked. The purpose of this essay is not to dispute that map but to examine its boundaries.

The perspective brought to bear is dual. The philosophical framework developed in two companion essays — *The Right Wine* and *Epistemic Pluralism and the Wine-Health Debate*, published under the pen name Trade Veteran (Internet Archive) — provides the analytical structure. A forty-year professional record in the importation of European wine provides the experiential ground. Neither perspective alone is sufficient. The scientific literature requires a framework capable of asking questions it has not posed to itself; and that framework requires a practical knowledge of what the wine market has actually produced, sold, and transformed over the period the literature covers. The present essay brings both to bear on Baxter's synthesis and, through it, on the field he represents.

II. The Field as Baxter Represents It

The modern scientific interest in wine and health can be dated with unusual precision. A 1979 article in *The Lancet* by St. Leger, Cochrane, and Moore of Cardiff reported that heart disease mortality correlated inversely with wine consumption across developed nations. The authors had no explanation for the finding, but noted with characteristic understatement that if wine were ever found to contain a constituent

protective against ischemic heart disease, isolating that constituent from its source would be something close to a sacrilege. The medicine, they suggested, was already in a highly palatable form.

What followed was an expanding field of inquiry touching cardiology, neurology, oncology, epidemiology, and biochemistry. The French Paradox — French populations consuming relatively high levels of saturated fat yet showing low rates of cardiovascular disease, with wine consumption as a defining feature of their lifestyle — became a household term after a 1991 television broadcast and generated a wave of research that has not fully subsided. Baxter traces this arc with clarity and appropriate skepticism: the inflation and deflation of resveratrol as a unifying explanation, the mounting evidence that wine's benefits are not reducible to any single compound, and the pendulum swing toward neo-prohibitionism that has increasingly characterized public health policy.

The Cretan data that preceded the French Paradox by three decades deserves particular note. Ancel Keys' *Seven Countries* study, published in the 1950s, found that residents of Crete enjoyed the longest life expectancy among the populations studied despite poor access to healthcare, with cardiovascular mortality at roughly 10% of the American rate. They were also heavy smokers with a relatively high fat intake. Wine with meals was a defining feature of the lifestyle. Baxter calls this the "Cretan Conundrum" — a paradox presaging the French Paradox by a generation, and one that eliminates the "better medical management" counter-argument entirely. These people were healthy without medical intervention.

Against this background Baxter proposes what he calls the skeptic's checklist: the criteria a hypothesis must satisfy before it can be considered established. Is there epidemiological evidence — population surveys showing a correlation? Do studies of different types reach the same conclusion? Is there a plausible cause-and-effect explanation? Is there clinical evidence of measurable benefit? Wine, he concludes, satisfies all four. It is this checklist, and the body of evidence Baxter marshals to satisfy it, that the present essay takes as its point of departure.

Baxter's synthesis is acknowledged here as a trustworthy and unusually candid account of what the field has established. His willingness to note the limitations of his own evidence, to criticize the resveratrol narrative from within, and to acknowledge the alcohol escalation problem without defensiveness sets him apart from much of the popular literature on the subject. The analysis that follows is not a dispute with his findings. It is an examination of the frame within which those findings have been made, and of the question that frame has consistently left outside its boundaries.

III. The Three Registers

Epistemic Pluralism and the Wine-Health Debate (Trade Veteran, Internet Archive) develops a framework for understanding why the wine-health debate has proved so resistant to resolution despite the accumulation of substantial evidence on multiple sides. The framework identifies three registers within which the debate operates, each with its own evidentiary standards, temporal horizon, and conception of what counts as the relevant object of study.

The policy-precaution register is concerned with public health messaging and the management of risk at a population level. Its characteristic move is to treat any evidence of harm as sufficient grounds for precautionary restriction, regardless of countervailing evidence of benefit. The United Kingdom's Chief Medical Officer declaring wine's health benefits an "old wives' tale" and France's health minister dismissing the French Paradox as an illusion are expressions of this register. Its temporal horizon is the news cycle and the policy mandate; its evidentiary standard is asymmetric, treating absence of proven safety as equivalent to proven harm.

The epidemiological-scientific register is concerned with establishing correlations, identifying mechanisms, and building toward causal explanations through the accumulation of independent confirmations. Baxter operates primarily within this register. Its temporal horizon is the research program; its evidentiary standard is the skeptic's checklist. It is the register within which the most rigorous work has been done and within which the most important findings have been made.

The historical-biocultural register is concerned with the long human relationship with wine as a dietary and cultural practice — the role of wine in the Mediterranean diet, the traditional patterns of consumption that produced the populations the epidemiological studies observed, the embodied knowledge of producers and consumers accumulated over centuries. This register appears in Baxter's text as rhetorical framing — the Jefferson quotation, the Holmes coda, the reference to pharaohs and kings seeking the secret of longevity — rather than as analytical content. It is deployed for color and conclusion rather than for evidence.

The argument of the present essay is that the question the field has not asked — whether the product now dominant in the market is the same product whose consumption produced the founding health signal — requires all three registers to pose and answer properly. It is a scientific question with a historical dimension and a policy consequence. The epidemiological-scientific register alone cannot ask it,

because the register's methods presuppose a stable referent. The product is not stable. That instability is the subject of what follows.

IV. What the Science Established and When

The founding epidemiological signal was detected in specific populations at a specific historical moment. The residents of Crete in the 1950s, the French cohorts of the 1970s and 1980s, the Danish populations whose grocery purchasing patterns across 3.5 million supermarket transactions were analyzed by Morten Grønbaek's team — these were populations consuming a product with identifiable characteristics. It was European in origin, produced in cool or moderate climates from varieties long adapted to those conditions, made by traditional methods with minimal technological intervention, and consumed at alcohol levels of 12 to 13 percent as a regular accompaniment to meals.

Baxter himself documents what happened next. A 2015 study from the University of California Davis, published in the *Journal of Wine Economics*, found a documented trend toward rising alcohol levels across both Old and New World wines, correlating with sites of greatest average temperature increase. Traditional wines, Baxter notes, had alcohol contents of around 12 to 13 percent; it is now not unusual to see wines above 16 percent. He observes that health studies are generally based on the presumption of the lower alcohol levels, and that calibrating consumption of modern wines accordingly is "a bit like taking credit for eating your vegetables even though they are deep fried."

The analogy is his own, and it is precise. But it frames the problem as one of individual calibration rather than systemic product transformation. The question it implies but does not ask is whether the deep-frying happened to the entire category, and whether the studies that established the health benefit were studying a product that the market has substantially replaced. This is not a question about individual consumer behavior. It is a question about the referent of the literature — about what "wine" denotes in the epidemiological record versus what it denotes on the shelf of a contemporary retailer.

The product-substitution problem does not invalidate the science. It recontextualizes it. The signal is real; the mechanism is established; the population studies are valid for the product they studied. What has not been established is that the product they studied is the product currently available at scale to the populations whose health is now at issue.

V. The Mechanism the Field Identified

Baxter's Chapter 5 provides the biochemical account of why wine produces the effects the epidemiological record documents. It is worth following in some detail, because the mechanism is product-specific in ways the field has not fully acknowledged.

The central molecules are polyphenols — a large family of compounds that includes flavonoids, tannins, resveratrol, and numerous related structures. Polyphenols are produced by the grapevine as a stress response: to ultraviolet radiation, fungal challenge, bacterial pressure, and the general metabolic demands of ripening under difficult conditions. The vine stressed by poor soil, limited water, and climatic challenge concentrates polyphenols in the grape skin. The vine grown in fertile soil with irrigation and optimized nutrition produces fruit efficiently but with a diminished polyphenol profile. This relationship — vine stress to polyphenol concentration — is the biochemical foundation of the health argument, and it is a direct function of where and how the grape is grown.

The health consequences of this polyphenol load are extensive. Polyphenols bind LDL cholesterol and reduce its oxidation, the process most directly implicated in arterial plaque formation. They inhibit *Helicobacter pylori* and its toxins — the bacterium now known to be responsible for the majority of peptic ulcers, a finding that retrospectively vindicates the traditional European practice of wine as an *aperitif* and *digestif*. They exhibit antiviral activity by binding surface proteins that viruses use to penetrate host cells. They inhibit the enzyme that facilitates dental plaque formation. They have been shown to minimize the postprandial rise in oxidized LDL when consumed with meals — the "postprandial oxidative stress" that Baxter identifies as one of the primary mechanisms by which diet accelerates aging.

Complicating this picture, Baxter notes, is a commercial pressure that works directly against the polyphenol-concentration mechanism. Wine critics and consumers have increasingly demanded concentrated, intense flavors — a profile achieved by delaying harvest past the point of physiological ripeness to accumulate sugars and intensify phenolic extraction. The result is higher alcohol, a different phenolic profile, and a product whose relationship to the studied mechanism is at best uncertain. Baxter registers this tension at the level of individual viticulture. He does not extend it to the market as a whole.

VI. The Template Proved Legible to Technology

Chapter 5 of Baxter's book opens with a description of Enologix, a Napa Valley firm that reverse-engineers high-scoring wines and advises producers on manipulating vineyard management and winemaking processes to match a target chemical profile. Baxter presents this without critical comment, as a notable technological development. It is taken here as something more: the field's inadvertent acknowledgment, from within a health-science text, that the wine product is fully manipulable toward a commercially determined target.

The target Enologix optimizes for is the critic-score profile. That profile — concentrated, extracted, high in alcohol, designed for immediate sensory impact — is not the profile of the wines whose consumption produced the founding health signal. The stressed-vine polyphenol matrix that Baxter's biochemistry identifies as the active mechanism is not what Enologix is engineering toward. The two optimization targets are different, and the market has been organized around one of them for three decades.

This is not a criticism of Enologix or of the producers who use its services. It is an observation about what the market has selected for and what the health literature has continued to assume. The template that proved legible to technology was the flavor profile of a specific wine type; the health benefit associated with wine in the literature derived from a different profile, produced by different means, under different conditions. The field has not registered the divergence.

VII. The Asymmetry Baxter Exemplifies

Running through Baxter's synthesis is a consistent asymmetry that is worth naming directly, because it characterizes the field as a whole and not merely one author's choices.

Baxter observes that the processed food products available today "bear little resemblance to traditional fare," and that habits of eating and drinking have been shaped by cultural and religious practice for as long as there have been human societies. He does not apply the parallel observation to wine. He documents the alcohol escalation and frames it as a consumer-calibration problem. He establishes the stressed-vine / polyphenol relationship and frames it as a price-quality correlation. He proposes a "Drinking 101" curriculum that would teach how to drink — with meals, in moderation, as a regular practice rather than an occasional excess — but not what

to drink beyond the general category of wine. At each point the argument approaches the product-transformation question and turns away from it.

The asymmetry is not an intellectual failure. Baxter is a careful thinker and his candor about the field's uncertainties is genuine. The asymmetry is structural. The medical and professional community most capable of recognizing and articulating the product-transformation argument is the community most socially embedded in the post-transformation industry. A physician whose wine experience is formed within a community that drinks well — Euro-centric, top-tier, with the economic means to access the product that actually delivers the mechanism — has no personal experience of the problem. And a physician whose professional social world intersects with a local wine industry built on the post-transformation model has reasons, none of them cynical, to frame the issue as one of individual calibration rather than categorical product failure.

The silence, in other words, has a social geography. It is not the silence of ignorance but the silence of embeddedness. Naming it is not an accusation. It is an observation about why a framework developed outside that embeddedness — from the vantage point of a trade professional who watched the transformation occur and has the analytical record to document it — is necessary to ask the question the literature has left unasked.

VIII. The Affordability Refutation

The field's implicit assumption — shared by Baxter's "Eyes on the Price" sidebar — is that the health-relevant product is expensive and therefore impractical as a public health recommendation. The current generational rejection of wine has produced an industry-wide crisis that directly refutes this assumption. Market contraction has created buying opportunities in traditional, low-intervention wines at prices that would have been unimaginable during the premium expansion of the 1990s and 2000s. The wines that never entered the technological transformation pipeline are available in a stressed market at prices that make the affordability objection untenable. The barrier to accessing the right product is informational, not economic.

The qualification is that appellation alone is insufficient as a guide. The transformation was not geographically bounded but profile-driven, following a specific flavor target — concentrated, high-alcohol, critic-score optimized — across borders and traditions wherever the local raw material proved adaptable to it. In Spain, Ribera del Duero — source of some of the founding expressions of traditional

Castilian winemaking — now warrants the description "Napa del Duero." Toro and Jumilla followed the same arc. In Italy, the wines of Puglia and Abruzzo tell a recognizable story. The transformation followed the flavor profile, not the flag. Within appellations the variation can be as significant as between them, and the consumer requires the epistemic tools to discriminate at that level — which is precisely what *The Right Wine* provides.

The generational rejection of wine that has driven the current market crisis deserves a brief hypothesis of its own, because its consequences for the argument are not straightforward. The most visible driver is the broad cultural demonization of alcohol as a category — a policy-precaution register response that makes no distinction between wine consumed with meals as a dietary practice and spirits consumed for intoxication. The baby has been discarded with the bathwater. But it is at least worth asking whether the dominant product of the post-transformation era contributed to its own rejection. A wine optimized for critic scores and cellar aging, consumed at ambient room temperature rather than the cool cellar temperature at which its character is properly expressed, delivers an experience of heat, weight, and alcoholic intensity that bears little resemblance to the wine-with-meals practice the health literature documents. The demonization of alcohol per se and the deterioration of the dominant product are not mutually exclusive explanations. Both may have contributed to a rejection that has caught the traditionally produced wines least responsible for either problem in its wake.

IX. Pre-Theoretical Confirmation

Two instances of pattern recognition, preceding and independent of the scientific literature, converge on the same product-specific mechanism that Baxter's biochemistry confirms. They are noted here not as anecdotal evidence in the dismissive sense Baxter rightly cautions against, but as instances of independent confirmation — the criterion his own checklist identifies as essential to establishing a hypothesis.

Thomas Jefferson consumed wine with meals daily, tripled the doctor's prescribed limit of one glass when dining with friends, and lived to 83 in an era of high general mortality. His practice was a cultural inheritance, not a health strategy, and he did not theorize it. Baxter cites the same Jefferson letter that appears as a primary source in *Epistemic Pluralism* — its presence in both texts, arrived at independently, is itself a form of confirmation. Jefferson was drinking the wines of Burgundy, Bordeaux, and Piedmont: cool-climate, traditionally produced, consumed in the dietary context the

epidemiological literature would later identify as the operative unit of the health benefit.

Alejandro Fernández, founder of Bodegas Pesquera in Ribera del Duero, was an instinctual winemaker without formal training who produced wines more tannic than his neighbors' in the early period of the appellation's recognition. When asked to account for the difference he offered a simple explanation: his wines cured his ulcers. The observation predated the identification of *Helicobacter pylori* as the primary cause of peptic ulcer disease — a discovery that would eventually earn its authors a Nobel Prize — and has since been confirmed by the protein-binding mechanism Baxter documents in detail. Higher polyphenol load, greater inhibition of the bacterium and its toxins: the folk pharmacology and the molecular biology describe the same event. The checklist criterion of independent confirmation is satisfied by a winemaker who had never heard of a checklist.

It is noted that the appellation Fernández helped establish has since followed the broader transformation arc. The founding-period product that gave rise to the observation is not representative of what Ribera del Duero produces at scale today.

X. The Structural Conclusion

The wine-health literature has established the signal, identified the mechanism, and documented the product transformation. In each case the evidence is available within Baxter's own synthesis. What the literature has not done is connect these three findings into the question they jointly imply: whether the product now dominant in the market delivers the mechanism that produced the signal. This is not a failure of science. It is a failure of epistemic framing — a consequence of operating within a single register when the question requires three.

Baxter's skeptic's checklist, applied to the "wrong product" hypothesis, returns a positive result on its own terms. The epidemiological correlation exists and predates the French Paradox by a generation. Independent confirmation is available across study types, across populations, and — as the cases of Jefferson and Fernández illustrate — across the boundary between scientific and pre-theoretical knowledge. The cause-and-effect mechanism is established in Baxter's own biochemical account, and it is product-specific. The absence of clinical studies stratifying explicitly by production method and climate is not a refutation of the hypothesis but the precise gap it identifies — the question that has not been asked within the register in which it needs to be asked.

The three-register framework developed in *Epistemic Pluralism* provides the structure within which the question can be posed and the existing evidence recruited toward an answer. *The Right Wine* provides the practical specification of the product that answer identifies. The present essay has attempted to demonstrate that the literature's own findings — assembled by a careful and sympathetic synthesizer with no stake in the conclusion — support a structural argument the literature has not drawn.

The wine that produced the signal is still available. It is not expensive. It requires only the knowledge to find it.

Coda

Oliver Wendell Holmes closes Baxter's epilogue: *When wine enlivens the heart, may friendship surround the table.* The table, the meal, the friend, the specific glass — these are not decorative additions to a biochemical argument. They are the argument. The field has been circling them for forty years.

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For the framework within which this analysis is developed, see Epistemic Pluralism and the Wine-Health Debate *(Trade Veteran, Internet Archive). For the practical specification of the product the argument identifies, see* The Right Wine *(Trade Veteran, Internet Archive).*